



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,658	01/10/2005	Seiji Satou	Q85241	5608
23373	7590	10/10/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EVANS, GEOFFREY S	
			ART UNIT	PAPER NUMBER
			1725	

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/520,658	SATOU ET AL.
	Examiner Geoffrey S. Evans	Art Unit 1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 15-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 15-29 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 January 2005 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 20050110, 20050321, 20060626

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

### DETAILED ACTION

1. Figures 2-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Claims 25 and 29 are objected to because of the following informalities: In claim 25 on line 2 and in claim 29 on line 2 "pulse-with" should be "pulse-width". Appropriate correction is required.

3. Claims 15-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 15 the relationship between "a switching element" on line 9 and "a switching element" on line 12 is unclear. In claim 16 on line 3 the relationship, if any, between "a first switching circuit" and the switching element recited on claim 15, line 9 ("a first switching circuit") is unclear. Similarly in claim 16 on line 7 the relationship, if any, between "a second switching circuit" and the switching element recited on claim 15, line 12 ("a second switching circuit") is unclear. In claim 17 there is no antecedent basis for "the opposed switching elements". In claim 19 on line 4 the relationship, if any, between "a first switching circuit" and the switching element

recited on claim 15, line 9 ("a first switching circuit") is unclear. Similarly in claim 19 on line 7 the relationship, if any, between "a second switching circuit" and the switching element recited on claim 15, line 12 ("a second switching circuit") is unclear. In claim 21 on line 3 and in claim 25 on line 3 the meaning of "from outside" is unclear. In claim 22 on line 12 it is unclear what receives the control signal pulse in parallel? In claim 22 the relationship between "a switching element" on line 9 and "a switching element" on line 11 is unclear. Respectfully suggest using "a first switching element" and "a second switching element" to obviate this rejection. In claim 26 the relationship between "a switching element" on line 9 and "a switching element" on line 13 is unclear. Respectfully suggest using "a first switching element" and "a second switching element" to obviate this rejection. In claim 28 the relationship between "a switching element" on line 9 and "a switching element" on line 13 is unclear. Respectfully suggest using "a first switching element" and "a second switching element" to obviate this rejection.

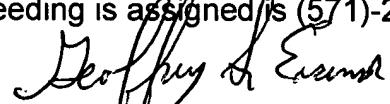
4. Claims 15-29 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nishizawa et al. in U.S. patent No. 5,021,936 discloses a pwm controller with integrated high and low speed semiconductor switching elements. Tanaka in Japan Patent No. 63-43,576 discloses a pulse width modulation inverter with high and low speed switch semiconductor elements. Okubo in Japan Patent No. 63-262,062 has an inverter with high and low speed switch semiconductor elements.

Art Unit: 1725

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571)-272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

GSE

  
Geoffrey S. Evans  
Primary Examiner  
Group 1700